first vector operation circuit means coupled to said second sensor means and being responsive to the magnetic vector signal $\bar{H}$ provided thereby and to said first sensor apparatus, being responsive to said vector component signal $\bar{G}$ when said vector component signal $\bar{A}$ is substantially zero and including means for normalizing the scalor value of the signal $\bar{G}$ to unity and maintaining said unity value substantially constant and means performing the vector operation $\bar{H}-(\bar{G}\cdot\bar{H})\,\bar{G}=\bar{H}_h$ and providing an electrical output signal $\bar{H}_h$ which is a component of the vector signal $\bar{H}$ along a substantially horizontal plane;

second vector operation circuit means coupled to said first vector operation circuit means and said electrical output signal $\bar{H}_h$ provided thereby and said second circuit means and said output signal $\bar{S}$ provided thereby and including circuit means performing the vector operation $\bar{H}_h\cdot\bar{S}=S_N$ and providing an electrical output signal S_N which is a north compass coordinate component signal of $\bar{S}$;

third vector operation circuit means coupled to said first sensor apparatus, being responsive to the vector component signal $\bar{G}$ when said vector component signal $\bar{A}$ is substantially zero and said first vector operation circuit means and said electrical output signal $\bar{H}_h$ provided thereby and said second circuit means and said output signal $\bar{S}$ provided thereby, including circuit means performing the vector operation $\bar{G}\times\bar{H}_h\cdot\bar{S}=S_E$ and providing an electrical output signal S_E which is an east compass coordinate component signal of $\bar{S}$; and

means coupled to said electrical output signals S_N and S_E providing a visual representation thereof.

2. The locator system as defined by claim **1** and additionally including fourth vector operation circuit means coupled to said first sensor apparatus, being responsive to said vector component signal $\bar{G}$ when said vector component signal $\bar{A}$ is substantially zero and to said double integration circuit means and said distance signal $\bar{S}$ provided thereby, said fourth vector operation circuit means including circuit means performing the vector operation $\bar{G}\cdot\bar{S}=\bar{S}_V$ and providing an electrical output signal S_V which is a vertical coordinate component signal of $\bar{S}$.

3. The system as defined by claim **2** and additionally including means coupled to said electrical output signal S_V providing a visual representation thereof.

4. The system as defined by claim **3** wherein said means coupled to said electrical output signals S_V, S_N and S_E additionally includes analog to digital conversion means.

5. The system as defined by claim **4** and additionally including digital readout means coupled to said analog to digital conversion means.

6. The locator system as defined by claim **1** wherein said first sensor apparatus comprises:

substantially non-magnetic support means attached to said carrier adapted for movement in selected compass directions;

a cantilevered beam member having one end rigidly attached to said support means;

a weight under the influence of the environment's gravitational field and the moving mode of operation attached to the other end of said beam member;

an electrically powered accelerometer assembly mounted on said beam member and being responsive to the stress upon said beam member caused by said weight to generate an analog composite electrical output signal; and

wherein said second sensor apparatus comprises: an electrically powered flux gate magnetometer assembly housed in said support means and generating an analog electrical output signal corresponding to the magnetic pole force vector $\bar{H}$.

7. The system as defined by claim **6** and additionally including means for attaching said support means to a human limb adapted to move while walking, running and the like.

8. The system as defined by claim **7** wherein said first, second, and third vector operation circuit means comprises analog computing elements.

9. The system as defined by claim **7** wherein said human limb comprises the leg.

* * * * *